AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (canceled).

2. (original): An apparatus for preventing an overshoot in a rotation speed of an internal-combustion engine, comprising:

a starter/battery charger that includes 3-phase armature coils, is coupled to a crank shaft of the internal-combustion engine, operates as a starting motor for starting the internal-combustion engine, and also operates as a charging generator for charging a battery after the internal-combustion engine has been started; and

a controller for performing a driving control for causing the starter/battery charger to generate positive torque and a braking control for causing the starter/battery charger to generate negative torque and thereby controlling the rotation speed of the internal-combustion engine,

wherein the controller causes the starter/battery charger to generate negative torque in the braking control by effecting short-circuiting between phases of the 3-phase armature coils of the starter/battery charger, to thereby prevent the overshoot in the rotation speed of the internal-combustion engine.

3. (original): The apparatus according to claim 2, further comprising switches that are provided between 3-phase lines of the 3-phase armature coils of the starter/battery charger, for effecting the short-circuiting between the phases of the 3-phase armature coils.

4. (original): The apparatus according to claim 2 or 3, wherein the starter/battery charger further includes a field coil, and wherein the controller controls not only currents flowing through the 3-phase armature coils but also a current flowing through the field coil, to thereby prevent a rapid torque variation in the starter/battery charger.

5. (canceled).

6. (original): A method for preventing an overshoot in a rotation speed of an internal-combustion engine, the method using a starter/battery charger that includes 3-phase armature coils, is coupled to a crank shaft of the internal-combustion engine, operates as a starting motor for starting the internal-combustion engine, and also operates as a charging generator for charging a battery after the internal-combustion engine has been started; and a controller for performing a driving control for causing the starter/battery charger to generate positive torque and a braking control for causing the starter/battery charger to generate negative torque and thereby controlling the rotation speed of the engine, wherein:

the starter/battery charger is caused to generate negative torque in the braking control by effecting short-circuiting between phases of the 3-phase armature coils of the starter/battery charger, to thereby prevent the overshoot in the rotation speed of the internal-combustion engine.

7. (original): The method according to claim 6, wherein the short-circuiting between the phases of the 3-phase armature coils of the starter/battery charger is effected by using switches that are provided between 3-phase lines of the 3-phase armature coils.

8. (original): The method according to claim 6 or 7, wherein the starter/battery charger is a rotary electric machine including a field coil in addition to the 3-phase armature

coils, and wherein not only currents flowing through the 3-phase armature coils but also a current flowing through the field coil is controlled, to thereby prevent a rapid torque variation in the starter/battery charger.

9. (canceled).

10. (previously presented): An apparatus for preventing an overshoot in a rotation speed of an internal-combustion engine before reaching an idling rotation speed thereof, comprising:

a starter/battery charger that includes 3-phase armature coils, is coupled to a crank shaft of the internal-combustion engine, operates as a starting motor for starting the internal-combustion engine, and also operates as a charging generator for charging a battery after the internal-combustion engine has been started; and

a controller for carrying out a judgment that a self-ignition state has been established in the internal-combustion engine prior to the rotation speed reaching the idling rotation speed, switching from a driving control for causing the starter/battery charger to generate positive torque to a braking control for causing the starter/battery charger to generate negative torque upon the judgment, and thereby controlling the rotation speed of the internal-combustion engine,

wherein the controller causes the starter/battery charger to generate negative torque in the braking control by effecting short-circuiting between phases of the 3-phase armature coils of the starter/battery charger, to thereby prevent the overshoot in the rotation speed of the internal-combustion engine.

11. (previously presented): The apparatus according to claim 10, further comprising switches that are provided between 3-phase lines of the 3-phase armature coils of the starter/battery charger, for effecting the short-circuiting between the phases of the 3-phase armature coils.

12. (previously presented): The apparatus according to claim 10 or 11, wherein the starter/battery charger further includes a field coil, and wherein the controller controls not only currents flowing through the 3-phase armature coils but also a current flowing through the field coil, to thereby prevent a rapid torque variation in the starter/battery charger.

13. (canceled).

14. (previously presented): A method for preventing an overshoot in a rotation speed of an internal-combustion engine before reaching an idling rotation speed thereof, the method using a starter/battery charger that includes 3-phase armature coils, is coupled to a crank shaft of the internal-combustion engine, operates as a starter for starting the internal-combustion engine, and also operates as a charging generator for charging a battery after the internal-combustion engine has been started; and a controller for carrying out a judgment that a self-ignition has been established in the internal-combustion engine prior to the rotation speed reaching an idling rotation speed, switching from a driving control for causing the starter/battery charger to generate a positive torque to a braking control for causing the starter/battery charger to generate a negative torque and thereby controlling the rotation speed of the internal-combustion engine,

wherein the starter/battery charger is caused to generate the negative torque in the braking control by effecting short-circuiting between phases of the 3-phase armature coils of the

starter/battery charger, to thereby prevent the overshoot in the rotation speed of the internal-combustion engine.

15. (previously presented): The method according to claim 14, wherein the short-circuiting between the phases of the 3-phase armature coils of the starter/battery charger is effected by using switches that are provided between 3-phase lines of the 3-phase armature coils.

16. (previously presented): The method according to claim 14 or 15, wherein the starter/battery charger is a rotary electric machine including a field coil in addition to the 3-phase armature coils, and wherein not only currents flowing through the 3-phase armature coils but also a current flowing through the field coil is controlled, to thereby prevent a rapid torque variation in the starter/battery charger.